

What is claimed is:

1. A communication services architecture for a netcentric computing system, comprising:
 - a communication services layer including communication services, communication security services, virtual resource services and directory services;
 - ✓ a transport services layer including message transport services, packet forwarding/Internetworking services, circuit switching services, transport security services, network address allocation services and quality of service services; and
 - ✓ a network media services layer including media access services and physical media services.
2. The communication services architecture of claim 1, wherein said communication services include core messaging services and specialized messaging services.
3. The communication services architecture of claim 2, wherein said core messaging services transfer information from one application to another application in said netcentric computing system.
4. The communication services architecture of claim 2, wherein said core messaging services may be selected from the group consisting of file transfer services, remote procedure call services, message-oriented services and streaming services.
5. The communication services architecture of claim 4, wherein said file transfer services may be selected from the group consisting of file transfer protocol services, hyper-text transfer protocol services, secure hyper-text transfer protocol services and file transfer and access management services.
6. The communication services architecture of claim 4, wherein said streaming services may use a streaming protocol that may be selected from the group consisting of real-time streaming protocol, real-time transport protocol and real-time control protocol.
7. The communication services architecture of claim 2, wherein said specialized messaging services may be selected from the group consisting of E-mail messaging

services, database access messaging services, object request broker messaging services, computer-telephone integration messaging services, electronic data interchange messaging services and legacy integration services.

5 8. The communication services architecture of claim 1, wherein said communication security services may be selected from the group consisting of encryption services, identification/authorization services and access control services.

10 9. The communication services architecture of claim 8, wherein said identification/authorization services may be selected from the group consisting of basic ID/authentication, ID/password encryption, digital certificates, digital signatures, hardware tokens, virtual tokens and biometric identification.

15 10. The communication services architecture of claim 1, wherein said directory services include name services and domain services.

20 11. The communication services architecture of claim 1, wherein said virtual resource services may be selected from the group consisting of fax services, file sharing services, paging services, phone services, terminal services, printing services and audio/video services.

25 12. The communication services architecture of claim 11, wherein said terminal services may be selected from the group consisting of Telnet, 3270 emulation, tn3270, X Window System, remote control and rlogin.

30 13. A method of providing a communication services architecture for a netcentric computing system, comprising:

sharing a communication services layer including communication services, communication security services, virtual resource services and directory services with at least one client and a web server;

transporting data between said client and said web server with a transport services layer that includes message transport services, packet forwarding/Internetworking services, circuit switching services, transport security services, network address allocation services and quality of service services; and

interconnecting said client with said web server with a network media services layer including media access services and physical media services.

14. The method of claim 13, wherein said communication services include core

5 messaging services and specialized messaging services.

15. The method of claim 14, wherein said core messaging services transfer information from one application to another application in said netcentric computing system.

10 16. The method of claim 14, wherein said core messaging services may be selected from the group consisting of file transfer services, remote procedure call services, message-oriented services and streaming services.

15 17. The method of claim 16, wherein said file transfer services may be selected from the group consisting of file transfer protocol services, hyper-text transfer protocol services, secure hyper-text transfer protocol services and file transfer and access management services.

20 18. The method of claim 16, wherein said streaming services may use a streaming protocol that is selected from the group consisting of real-time streaming protocol, real-time transport protocol and real-time control protocol.

19. The method of claim 14, wherein said specialized messaging services may be selected from the group consisting of E-mail messaging services, database access messaging services, object request broker messaging services, computer-telephone integration messaging services, electronic data interchange messaging services and legacy integration services.

30 20. The method of claim 13, wherein said communication security services may be selected from the group consisting of encryption services, identification/authorization services and access control services.

21. The method of claim 20, wherein said identification/authentication services 35 may be selected from the group consisting of basic ID/authentication, ID/password

encryption, digital certificates, digital signatures, hardware tokens, virtual tokens and biometric identification.

22. The method of claim 13, wherein said directory services include name
5 services and domain services.

23. The method of claim 13, wherein said virtual resource services may be selected from the group consisting of fax services, file sharing services, paging services, phone services, terminal services, printing services and audio/video services.

10 24. The method of claim 23, wherein said terminal services may be selected
from the group consisting of Telnet, 3270 emulation, tn3270, X Window System, remote
control and rlogin.

15 25. A communication services architecture for a netcentric computing system, comprising:

a web server connected with at least one client;

a communication layer located on said client and said web server, wherein said communication layer includes a communication services layer and a transport layer;

a communication fabric layer located on said client and said web server, wherein said communication fabric layer includes said communication services layer, said transport layer and a network media layer:

wherein said communication services layer includes communication services, communication security services, virtual resource services and directory services;

wherein said transport layer includes message transport services, packet forwarding/Internetworking services, circuit switching services, transport security services, network address allocation services and quality of service services and wherein said network media services: and

30 wherein said network media layer includes media access services and physical media services.

26. The communication services architecture of claim 25, wherein said communication services include core messaging services and specialized messaging services.

5 27. The communication services architecture of claim 26, wherein said core messaging services may be selected from the group consisting of file transfer services, remote procedure call services, message-oriented services and streaming services.

10 28. The communication services architecture of claim 27 wherein said file transfer services may be selected from the group consisting of file transfer protocol, hyper-text transfer protocol, secure hyper-text transfer protocol and file transfer and access management.

15 29. The communication services architecture of claim 27, wherein said streaming services may use a streaming protocol that may be selected from the group of protocols consisting of real-time streaming protocol, real-time transport protocol and real-time control protocol.

20 30. The communication services architecture of claim 26, wherein said specialized messaging services may be selected from the group consisting of E-mail messaging services, database access messaging services, object request broker messaging services, computer-telephone integration messaging services, electronic data interchange messaging services and legacy integration messaging services.

25 31. The communication services architecture of claim 25, wherein said communication security services may be selected from the group consisting of encryption services, identification/authentication services and access control services.

30 32. The communication services architecture of claim 31, wherein said identification/authentication services may be selected from the group consisting of basic ID/authentication, ID/password encryption, digital certificates, digital signatures, hardware tokens, virtual tokens and biometric identification.

33. The communication services architecture of claim 25, wherein said directory services include name services and domain services.

34. The communication services architecture of claim 25, wherein said virtual resource services may be selected from the group consisting of fax services, file sharing services, paging services, phone services, terminal services, printing services and audio/video services.

35. The communication services architecture of claim 34, wherein said terminal services may be selected from the group consisting of Telnet, 3270 emulation, tn3270, X Window System, remote control and rlogin.